

PUDOVKIN, M. A.

"On the Progress of Water-Oil Contact in One-Dimensional Flow"  
Tr. Kazansk. Khim.-Tekhnol. In-ta, No. 18, 1954, 152-181

The author examines the problem of the plane ~~не~~ nonsteady state filtration of two homogeneous elastic liquids (water, oil) in the case when at the initial moment the liquids have a straight line boundary of separation, and the initial pressure in the layer is everywhere constant. For the solution the author uses the Laplace transformation with respect to time. The reviewer states that many of the author's results are inaccurate because of a false assumption. (RZhMekh, No 7, 1955)

SO: Sum-No 787 12 Jan 56

SOV/124-58-11-12903

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 11, p 149 (USSR)

AUTHOR: Pudovkin, M. A.

TITLE: On the Simplest Problem of the Displacement of an Oil-bearing Bank (K prosteyshy zadache prodvizheniya kontura neftenosnosti)

PERIODICAL: Uch. zap. Kazansk. un-ta, 1957, Vol 117, Nr 2, pp 86-90

ABSTRACT: Using the setup of G. S. Salekhov (Izv. Kazansk. fil. AN SSSR, Ser. fiz. -matem. i tekhn. n., 1955, Nr 6, pp 3-38; RZhMekh, 1956, Nr 8, abstract 5308) the author investigates the problem of the control of the motion of an oil bank in a one-dimensional semi-infinite elastic stratum; the oil is assumed to be contained in the finite portion of the stratum, the water in the semi-infinite. The motion obeys the linear law of seepage. The problem consists in the finding of the solution of the system

$$a_i \frac{\partial^2 p_i(x, t)}{\partial x^2} = \frac{\partial p_i(x, t)}{\partial t} \quad \left( \begin{array}{l} i=1 \text{ for } 0 \leq x \leq x_0 \\ i=2 \text{ for } x \geq x_0 \end{array} \right), \quad t > 0$$

under the conditions

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SOV/124-58-11-12903

On the Simplest Problem of the Displacement of an Oil-bearing Bank

$$p_1(x, 0) = p_2(x, 0) = p_2(\infty, t) = 0$$

$$p_1(x, t) = p_2(x, t) \text{ for } x = x_0(t)$$

$$C_1 \frac{\partial p_1(x, t)}{\partial x} = C_2 \frac{\partial p_2(x, t)}{\partial x} \text{ for } x = x_0(t)$$

Here  $x=x_0(t)$  is the running position of the oil bank,  $p_1(x, t)$  and  $p_2(x, t)$  are the respective pressures in the oil and water zones,  $a_1^2$  and  $a_2^2$  are the coefficients of piezoconductivity, and  $C_1$  and  $C_2$  are the coefficients of fluidity. Using the method of theory of generalized heat potentials the author reduces the solution of the problem posed to a Volterra integral equation of the first kind. By way of example the author examines the case in which  $x=x_0(t)=A\sqrt{t}$ , where  $A$  is a constant. Bibliography: 5 references.

V. A. Karpychev

Card 2/2

PUDOVKIN, M. A. (Kazan')

"Modification of Stefan's Problem in Subterranean Hydromechanics."

report presented at the First All-Union Congress on Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb 1960.

PUDOVKIN, M.A. (Kazan')

Temperature field of a stratum engendered by injecting a heat  
transfer agent into it. PMTF no.2:169-175 Mr-Ap '64.  
(MIRA 17:8)

FUDOVKIN, M.A.

Solving a problem of underground hydromechanics in elastic  
drive. Izv. vys. ucheb. zav.; neft' i gaz 5 no.11:39-45 '62.  
(MIRA 17:6)  
1. Kazanskiy gosudarstvennyy universitet imeni M'yanova-Lenina.

PUDOVKIN, M.A. (Kazan')

Solution of the third linear thermal problem involving a  
uniformly moving boundary in a semiinfinite region. PMTF  
no.4:145-147 J1-Ag '61. (MIRA 14:10)  
(Thermodynamics)

FUDOVKIN, M. A.

"Solution of the third linear heat problem with a uniformly moving boundary in the semi-infinite region."

Report presented at the 1st All-Union Conference on Heat- and Mass- Exchange, Minsk, BSSR, 5-7 June 1961



33599

S/207/61/000/004/010/012  
EO32/E514

24.5200

1327

AUTHOR: Pudovkin, M.A. (Kazan')

TITLE: Solution of the third linear heat problem for a uniformly moving boundary in a semi-infinite domain

PERIODICAL: Akademii nauk SSSR. Siberskoye otdeleniye. Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki. no.4, 1961, 145-147

TEXT: It is pointed out that there are many practical problems in which it is necessary to have a knowledge of nonsteady-state temperature fields in media with moving boundaries. The general solution of such problems leads to integral equations which are very difficult to solve by numerical methods. The present author describes a method of solution of the third boundary value problem for the linear heat transfer equation in a semi-infinite medium whose boundary is moving with a constant velocity. The problem is equivalent to the solution of the following differential equation

$$a^2 \frac{\partial^2 T}{\partial x^2} - w \frac{\partial T}{\partial x} = \frac{\partial T}{\partial t} + b(T - T_0) \quad x > Vt, t > 0 \quad (1.1)$$

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Solution of the third linear ...

S/207/61/000/004/010/012  
E052/E514

where the second term on the righthand side describes the temperature change due to the displacement of an element, for example, in porous media into which a fluid is pumped at a constant rate  $W$ . It is assumed that  $W > V$ . Moreover, the following conditions must be satisfied

$$T(x, t) = T_0 = \text{const} = T(\infty, t) \quad \text{when } t = 0 \quad (1.2)$$

$$\alpha(T - T_0) - \beta \frac{\partial T}{\partial x} = \varphi(t) \quad \text{when } x = Vt \quad (1.3)$$

It is shown with the aid of suitable substitutions that the temperature distribution satisfying the above conditions is

$$T(x, t) = T_0 - \frac{a}{\beta \sqrt{\pi}} \exp \left[ - \frac{V - W}{2a^2} (x - Vt) \right] x + \int_0^t \frac{\varphi(\tau)}{\sqrt{t - \tau}} \exp \left[ - (t - \tau) \left( b + \frac{(V - W)^2}{4a^2} \right) - \frac{(x - Vt)^2}{4a^2(t - \tau)} \right] d\tau +$$

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Solution of the third linear ...

S/207/61/000/004/010/012  
E032/E514

$$\begin{aligned}
 & + \frac{2a^2}{\sqrt{\pi}} \left[ \frac{a}{\beta} + \frac{V - W}{2a^2} \right] \exp \left[ \frac{a}{\beta} (x - Vt) \right] \times \\
 & \times \int_0^t g(\tau) \exp \left\{ - (t - \tau) \left[ b + \frac{(V - W)^2}{4a^2} - a^2 \left( \frac{a}{\beta} + \frac{V - W}{2a^2} \right)^2 \right] \right\} \times \\
 & \times \operatorname{erfc} \left[ \frac{x - Vt}{2a \sqrt{t - \tau}} + a \left( \frac{a}{\beta} + \frac{V - W}{2a^2} \right) \sqrt{t - \tau} \right] d\tau \quad (2.12)
 \end{aligned}$$

There are 10 Soviet-bloc references (one a translation from English).

SUBMITTED: April 26, 1961

Card 3/3

ASAULENKO, L.G.; PUDOVKIN, M.I.

System of currents of elementary geomagnetic perturbation in the  
aurora zone. Geomag. i aer. 5 no.2:322-327 Mr-Apr '65. (MIRA 18:7)

1. Polyarnyy goefizicheskiy institut Kol'skogo filiala AN SSSR.

L 52635-65 EWT(1)/EWG(v)/FCC/EEC-4/EEC(t)/EWA(h) Po-4/Pe-5/Pq-4/Pae-2/Pt-7/  
Feb/Pi-4 GS/GW UR/0000/65/000/000/0049/0053

ACCESSION NR: AT5012354

AUTHOR: Pudovkin, M. I.

TITLE: Determination of the parameters of the disturbed ionosphere in the auroral zone

SOURCE: AN SSSR. Kol'skiy filial. Polyarnyy geofizicheskiy institut. Issledovaniye polyarnykh siyaniy, geomagnitnykh vozmushcheniy i ionosfery v vysokikh shirotakh (Investigation of aurorae, geomagnetic disturbances, and the ionosphere at high latitudes). Moscow, Izd-vo Nauka, 1965, 49-53

TOPIC TAGS: aurora, ionospheric disturbance, geomagnetic disturbance, radio wave absorption, radio noise

ABSTRACT: Data reported in the literature indicate that, in the course of geomagnetic disturbances during the night hours of winter months, the absorption of radio waves takes place in the current layer. This fact makes it possible to combine data on the state of the ionosphere obtained from an analysis of the geomagnetic variations with the results obtained from measurements of the intensity of cosmic radio noise and brightness of polar auroras, and thus opens up extensive possibilities for the study of the disturbed ionosphere. The following equations are derived:

$$\nu = \sqrt{7 \frac{A \text{ db} \cdot f^2 \text{ Mc } V}{8 H^2} \cdot 10^3} \quad (1)$$

$$N \Delta h = \sqrt{11 \frac{A \text{ db} \cdot 8 H^2}{V} f^2 \text{ Mc} \cdot 10^{10}} \quad (2)$$

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ACCESSION NR: AT5012354

These equations permit the determination of  $\bar{N}$  (ionization density and  $\bar{v}$  from the data of such readily available apparatus as a magnetic variation station and an instrument for measuring the intensity of cosmic radio noise. The equations were checked with a concrete example. The proposed method of studying the ionosphere should find practical applications. Orig. art. has: 5 formulas.

ASSOCIATION: None

SUBMITTED: 27Nov64

ENCL: 00

SUB CODE: ES, EC

NO REF SOV: 007

OTHER: 015

*Lord*  
2/2

LUKOVICH, M.I.; KRYNNIKOV, R.G.; SHUMILOV, O.I.

Magnetospheric perturbations in the aurora zone. Geomag. i aer.  
4 10.04-1100 H-D '67.  
(MIRA 18:1)

1. Polyarnyy geofizicheskiy institut Kol'skogo filiala AN SSSR.

Conductivity region...  
tional pattern developed by Fukushima to the extent that the medium is con-  
sidered to be subject to Hall conductivity as well. The current intensities  
found by the authors are compared graphically with those determined by

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by the shift of electric currents noted in the bay-shaped...  
of ionization drift at the height of the current is automatically determined from  
geomagnetic data. Data of three geophysical observatories were used for determining  
diurnal variations of ionospheric wind (Murmansk, Bukhta Tiksi, and College).  
Diurnal variations of the normal component of wind velocity are represented graph-  
ically. In the evening the ionospheric wind blows from north to south and at night

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L 50213-65

ACCESSION NR: AT5012349

and in the morning, from south to north. The maximum wind intensity occurs at mid-  
night or in the early morning. The change of the normal component of the wind  
velocity, which depends upon the angle formed by the current and the geographic  
parallel, is represented graphically. The period of the rotation velocity of the  
component is  $12^\circ$  per hr; the vector of the component rotates clockwise. A compari-  
son of curves of the normal component of wind velocity and the variation of the  
horizontal component of the geomagnetic field shows that the zero points and maxi-  
mum points approximately coincide. At College Observatory the velocity component  
attains zero value at midnight when auroras appear most often. This can be attributed  
to the fact that the ionospheric winds have no relation to the solar winds. Orig.  
art. has: 1 table and 5 figures. [EG]

ASSOCIATION: none

SUBMITTED: 27Nov64

NO REF SOV: 004

ENCL: 00

OTHER: 005

SUB CODE: ES

ATD PRESS: 4014

Card 2/2

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001343530003-9

Section, 12 USC

SUBMITTED: February 7, 1962

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L 50213-65 EWT(1)/EWG(v)/FCC/EEC(t)/EWA(h) Po-4/Pe-5/Pq-4/Pae-2/Pt-7/Peb/  
 ACCESSION NR: AT5012349 P1-4 GS/GW. UR/0000/65/000/000/0003/0010

AUTHOR: Pudovkin, M. I.

TITLE: Daily rate of the ionospheric wind velocity in the aurora zone and the S<sub>p</sub> variations

SOURCE: AN SSSR. Kol'skiy filial. Polyarnyy geofizicheskiy institut. Issledovaniye polyarnykh siyaniy, geomagnitnykh vozmushcheniy i ionosfery v vysokikh shirotakh (Investigation of aurorae, geomagnetic disturbances, and the ionosphere at high latitudes). Moscow, Izd-vo Nauka, 1965, 3-10

TOPIC TAGS: ionospheric current, ionospheric wind, normal wind component, geographic parallel, rotation velocity, geomagnetic field, aurora

ABSTRACT: The origin of ionospheric currents is based on ionospheric winds which act in the ionosphere as a dynamo. The velocity of ionospheric winds is determined by the shift of electric currents noted in the bay-shaped disturbances. The velocity of ionization drift at the height of the current is automatically determined from geomagnetic data. Data of three geophysical observatories were used for determining diurnal variations of ionospheric wind (Murmansk, Bukhta Tiksi, and College). Diurnal variations of the normal component of wind velocity are represented graphically. In the evening the ionospheric wind blows from north to south and at night

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PUDOVKIN, M.I.

Nighttime recombination in the  $E_s$  layer. Geomag. i aer. 1  
no.4:552-556 JI-Ag '61. (MIRA 14:12)

1. Polyarnyy geofizicheskiy institut Kol'skogo filiala AN SSSR.  
(Sporadic E (Ionosphere))  
(Magnetic storms)

89778

S/169/61/000/002/033/039  
A005/A001

9.9500  
3.9100

Translation from: Referativnyy zhurnal, Geofizika, 1961, No. 2, p. 49, # 20339

AUTHORS: Aleksandrov, B. A., Pudovkin, M. I., Yanovskiy, B. M.

TITLE: The Magnetic Field of Magnetic Disturbances in the Arctic and Ant-arctic Regions

PERIODICAL: V sb.: "Magnitno-ionosfernyye vozmushcheniya", No. 1, Moscow, AN SSSR, 1959, pp. 17-23

TEXT: During 1953-1957, up to five magnetic variational field stations operated simultaneously in the northwestern region of the Asiatic part of the USSR. Their data were used together with data of the arctic and mid-latitude magnetic observatories of the USSR for the presentation of the geomagnetic variation field during magnetic storms by synoptic maps of variation isolines. The analysis of these maps allowed the authors to draw some conclusions on the morphology of the magnetic variation field during storms. The author holds electric currents as the main cause of variations, they formed nearly linear and extended in latitudi-

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S/169/61/000/002/033/039  
A005/A001

The Magnetic Field of Magnetic Disturbances in the Arctic and Antarctic Regions

ionospheric data of the antarctic observatory Mirnyy led to the conclusion that these currents are originated, apparently, by the "dynamo mechanism" in the  $E_s$ -layer at its motion in the Earth's constant magnetic field.

V. Aranas'yeva

3.910013805.4705)  
3.9110

S/169/62/000/007/148/149  
D228/D307

AUTHORS: Korotin, A. B. and Pudovkin, M. I.

TITLE: Possible mechanism for the formation of magnetic disturbances

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 7, 1962, 35, abstract 7G232 (V sb. Spektr., elektrofotometr. i radiolokats. issled. polyarn. siyaniy i svecheniya nochn. neba, no. 6, M., AN SSSR, 1961, 37-42)

TEXT: The dynamo theory of polar magnetic disturbances is considered. A magnetic disturbance's magnitude is determined by the ionosphere's wind velocity  $V$ , the recombination rate  $q$  and the recombination factor  $\alpha$ . The theory is applied to the examination of the magnetic storm of 1 March 1960. The record of the geomagnetic field's H-component from 18 to 22 hrs world time on 1 March 1960, at Stn. Loparskaya was compared with the curve of the change in the auroral brightness. Both curves appear to be very similar. The change in the ionization density

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S/169/62/000/007/148/149  
D228/D307

Possible mechanism for ...

$N(t)$ , which is proportional to that for  $\sigma$ , was determined according to the magnetic field's variation from the dynamo theory's basic formula  $j = \sigma[vZ]$ , where  $j$  is the density of the current inducing the magnetic disturbance,  $\sigma$  is the atmosphere's conductivity, and  $Z$  is the geomagnetic field's vertical component. The change in the wind velocity was additionally derived on the grounds of the average variation in the corresponding season. Furthermore,  $N(t)$  was found from the curve of the auroral brightness change  $I(t)$  by numerically interpreting the ionization balance equation for different values of the parameters  $q$ ,  $\alpha$ , and  $N_{\max}$ . The best coincidence with the curve of  $N(t)$  obtained by both methods occurs when  $N_{\max} = 1.7 \times 10^6 \text{ cm}^{-3}$ ,  $q = 3 \times 10^3 \text{ cm}^{-3}\text{sec}^{-1}$ , and  $\alpha = 10^{-9} \text{ cm}^3.\text{sec}^{-1}$ . It follows from this value for  $\alpha$  that the currents responsible for polar magnetic disturbances flow in the E layer. The value of  $\alpha$  is so small that the electron density cannot undergo any rapid changes. Therefore, the magnetic field's short-period variations cannot be explained on the basis of the dynamo theory. /-Abstracter's note: Complete translation.-/  
Card 2/2

PUDOVKIN, M. I.

Cand Phys-Math Sci - (diss) "Sources of magnetic coil-shaped disturbances." Leningrad, 1961. 7 pp; (Main Board of North Sea Approaches of the Ministry of Ocean Fleet USSR, Arctic and Antarctic Scientific Research Inst); 200 copies; price not given; (KL, 7-61 sup, 220)

NR: AR6032691

SOURCE CODE: UR/0203/66/006/005/0875/0880

AUTHOR: Pudovkin, M. I.

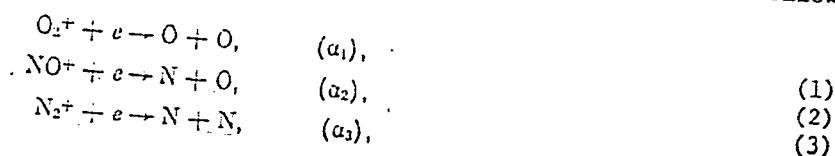
ORG: Arctic Geophysical Institute of the Kol'sk Division of AN SSSR (Polyarnyy  
geofizicheskiy institut Kol'skogo filiala AN SSSR)

TITLE: Recombination processes in lower ionosphere

SOURCE: Geomagnetizm i aeronomiya, v. 6, no. 5, 1966, 875-880

TOPIC TAGS: ionospheric physics, aurora, ion recombination

ABSTRACT: A concise review of the present knowledge of dissociative recombination processes taking place in the ionosphere is given, together with the author's evaluation of the reported theories and data, with particular emphasis on auroral ionization. The disappearance of electrons from the ionosphere is explained by the following summarizing series of equations:

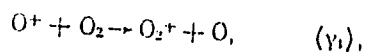


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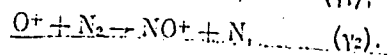
UDC: 550.388.2



ACC NR: AP6032691



(4)



(5)

It is pointed out, however, that in the case of auroral ionization an additional process must be taking place, which would account for high concentration of  $NO^+$  ions appearing immediately after the onset of aurora polaris. Inclusion in the above series of equations of the reaction  $N_2^+ + O_2 \rightarrow NO^+ + NO$  seems to fill the existing gap. Rate of this reaction is evaluated as  $10^{-13}$  to  $10^{-12}$   $cm^3/sec$ . The reaction may also be considered in explaining the processes taking place in the calm ionosphere during the daytime. Orig. art. has: 11 formulas and 1 figure.

SUB CODE: 04/ SUBM DATE: 12May65/ ORIG REF: 014/ OTH REF: 024

Card 2/2

PANASYUK, V.A., inzh.; PUDOVKIN, M.P., tekhnik

Redesigning the automatic protection system of high-pressure heaters.  
Energetik 8 no.11:24 N '60.

(Boilers--Air preheating)

(MIRA 13:12)

(Automatic control)

PANASYUK, V.A., inzh.; PUDOVKIN, M.P., inzh.

Redesigning of the automatic control systems of high-pressure  
FVSS-200 and FVSS-350 heaters. Elek. sta. 31 no.9:75-76 S '60.  
(MIRA 14:10)

(Boilers)

PUDOVKIN, V., kinorezhisser, narodnyy artist SSSR, laureat Stalinskoy premii.

"Return of Vasilii Bortnikov." Color moving picture. Reviewed by V. Pudovkin. Kinomekhanik no.5:46-48 My '53. (MLRA 6:6)  
(Moving-picture plays)

PUDOVKIN, Ye.

AID P - 3151

Subject : USSR/Miscellaneous

Card 1/1 Pub. 135 - 13/20

Author : Pudovkin, Ye., Maj. Eng.

Title : Organizing technical training and planning regulation work

Periodical : Vest. vozd. flota, 10, 64-67, 0 1955

Abstract : The author reviews critically an article in this periodical, "Improving methods of technical servicing of aircraft", (no. 2, F 1955). He cites examples from his unit and stresses the importance of organization. Names are mentioned.

Institution : None

Submitted : No date

PUDOVKIN, Ye.G., inzh.

Manufacture of ceramic blocks and single-layer exterior reinforced ceramic slabs made of them. Stroimaterialy 8 no. 11:24-26  
N '62. (MIRA 15:12)  
(Ceramics) (Building materials)

PUDOVKIN, Ye.G., inzh.

Manufacture of drain pipes for a brick plant. Stroi.mat. 8  
no.3:18-21 Mr '62. (MIRA 15:8)  
(Pipe, Clay)

PUDOVKIN, Yu.Ya.

Using a conductor pipe with two drill stabilizers. Neftianik 2  
no.10:26-27 0 '57. (MIRA 10:12)

1. Starshiy inzhener proizvodstvenno-tehnicheskogo otdela  
Al'met'yevskoy kontory razvedochnogo bureniya tresta Tatnefterazvedka.  
(Oil well drilling--Equipment and supplies)



37327

S/169/62/000/004/035/103  
D228/D302

3,5132  
AUTHOR:

Pudovkina, I. B.

TITLE:

Some results of the study of local anomalies of the atmosphere's electrical field in the vicinity of Bak-sanskoye Gorge

PERIODICAL:

Referativnyy zhurnal, Geofizika, no. 4, 1962, 27, abstract 4B176 (V sb. Fiz. oblakov i osadkov, v. 2 (5), M., AN SSSR, 1961, 134-145)

TEXT: Measurements of the gradient of the electrical field's potential and the air's conductivity were made respectively by means of radioactive collectors and suction condensers. Torsion electrometers were used to record the readings. The measurements were carried out at three points on the slopes of El'brus; the excess of the upper point over the lower amounted to 2050 m. Comparisons of the recordings of the potential's gradient which were made simultaneously by the applied apparatus and an electrostatic fluxmeter, showed that the recordings coincide satisfactorily if the field's

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D228/D302

Some results of ...

changes last for not less than 3 - 5 min, the wind speed exceeds 1 m/sec, and the humidity does not exceed 80%. At the time of increased humidity and calm weather the divergences in the average magnitudes, recorded by both devices, may reach 20 - 30%. Periods with larger errors ( $\sim 40 - 50\%$ ), arising as a result of the loss of insulation by the collector can, according to the author's assertion, be detected in the character of the field's recording. Moreover, it is impossible to make use of collectors when measuring the field under thunder clouds and during prolonged rains. The investigations showed that at the lower station -- situated at the valley bottom, 2200 m above sea-level -- there were rather strong disturbances of the electrical field in summer, even in clear weather. At the upper stations, however, the field was normal. The anomalies appeared both as frequent (up to 5 times per hour) transitory (3 - 10 min) deviations of the potential's gradient from normal values to negative values ( $-5$  to  $-20$  V/m), which were sometimes observed for several hours, and in the form of steady decreases in the potential's gradient, lasting for several hours, X

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Some results of ...

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D228/D302

down to negative values. Similar changes in the potential's gradient arose towards the evening for 0.5 - 1 hr before the appearance of cloud. The evening anomalies, often (in 1/3 of the cases) unaccompanied by the appearance of clouds, are more stable in character; during them the potential's gradient fell to -20 to -50 V/m for 20 - 60 min. At the same time the air's electroconductivity dropped somewhat in the valley bottom. The field's changes were noted to heights of 100 - 150 m above the valley bottom level. They usually arose during high absolute humidity, at not less than 7 - 8 mb., often in the period 16 - 17 hrs. These anomalies later disappeared, though the humidity continued to grow. The measurements also showed that in the presence of wind which must lead to the air's maximum dustiness, the anomalies arise extremely rarely. As the author suggests, the obtained results may be explained by the electrification of embryonic drops (arising at high humidities) at the expense of the capture of negative ions of air and by the creation in this way of negative volume charges, situated over the valley bottom. /-Abstracter's note: Complete translation.\_/ 4

Card 3/3

*Bi. abs.*

*8. Acids, Alkalis, Salts,  
Non-metallic Elements*

Production of sodium chromate. Y. E. Vilayansky and D. I. Fedorova (J. appl. Chem., USSR, 1947, 20, 794-799).—The fusion diagrams of the systems  $\text{Na}_2\text{CrO}_4\text{--Na}_2\text{CO}_3$  and  $\text{--Na}_2\text{SiO}_3$  do not suggest compound or solid-solution formation. The eutectics contain 62.5 and 90% of  $\text{Na}_2\text{CrO}_4$ , m.p. 685° and 770°, respectively.  $\text{CaCrO}_4$  is freely sol. (80%) in  $\text{Na}_2\text{CrO}_4$  at 1000°. R. Tauson.

PUDOVKINA, I.A.; PUDOVKINA, Z.V.; SOLNTSEVA, L.S.

Studying wolframites by curves of the infrared absorption spectrum.  
Min. sbor. no.15:120-128 '61. (MIRA 15:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut mineral'nogo  
syr'ya, Moskva.

(Wolframite--Spectra)

Mineralnyi Spravochnik (Leningrad Minerals, by) ... V. 1967, Issue 1  
I. A. Novikova. Leningrad, Gostekhnizdat, 1957.  
105 p., illus., bibl., 1 table, 28 tabs.  
Literature: . 62-95.

SOBOLEVA, Mariya Vladimirovna; PUDOVKINA, Irina Alekseyevna; GERASIMOVSKIY,  
V.I., redaktor; NIKITINA, V.N., redaktor izdatel'stva; KRYNOCHKINA,  
K.V., tekhnicheskiiy redaktor

[Uranium minerals; a collection of articles] Mineraly urana; spra-  
vochnik. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po geol. i okhra-  
ne nedr, 1957. 407 p. (MIRA 10:4)  
(Uranium)

*Pudovkina, I. A.*

*46*  
The application of precise methods in the study of ore  
minerals. 1. A. Pudovkina, P. S. Romanov, and E. N.  
Naumova. 2. *Angew. Geol.* 2, 102-6 (1956).—A review of  
methods for detg. hardness and reflectivity, and a comparison  
of data obtained on several minerals by different authors.  
Michael Fleischer

*2*  
*4*  
*0*  
*0*  
*0*



PODOLNI A, I. A.

P. I. AVANET, Tavetnye Metal. 1934, No. 1, 19-21

PULOVKINA, I. A.  
P. S. SAAKYAN, Mineral. Syre 11, No. 7, 29-36, 1936

L 5313-66 EWT(1)/FCC DIAAP GS/GW

ACC NR: AT5023964

SOURCE CODE: UR/0000/65/000/000/0486/0489

AUTHOR: Pudovkina, I. B. <sup>44,55</sup>

ORG: Scientific Conference on Nuclear Meteorology, Obninsk (Nauchnaya konferentsiya po yadernoy meteorologii) <sup>44,55</sup>

TITLE: Method of collecting cloud water specimens with a cyclone precipitator <sup>12,44,55</sup>

SOURCE: Nauchnaya konferentsiya po yadernoy meteorologii. Obninsk, 1964. Radioaktivnyye izotopy v atmosfere i ikh ispol'zovaniye v meteorologii (Radioactive isotopes in the atmosphere and their use in meteorology); doklady konferentsii. Moscow, Atomizdat, 1965, 486-489

TOPIC TAGS: cloud formation, <sup>12,44,55</sup> atmospheric humidity, atmospheric precipitation, radioactivity <sup>12</sup>

ABSTRACT: The possibility of using cyclone precipitators to collect samples of water from clouds at altitudes of 3000 meters above sea level is discussed. A 150-mm diameter cyclone model was selected, and its characteristic precipitation efficiency evaluated (see Fig. 1). The root-mean-cube diameter of the precipitating droplet was found to be  $5\mu$  and the maximum--  $8-10\mu$ . The  $\beta$ -activity

Card 1/3

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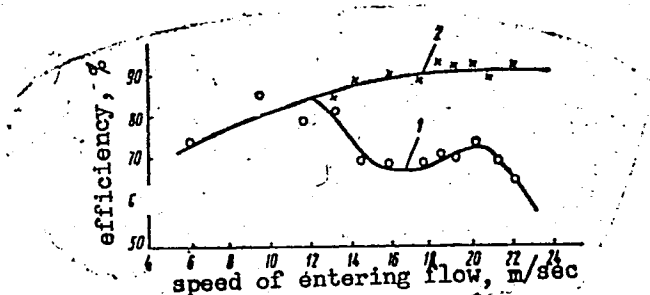


Fig. 1. Dependence of cyclone efficiency on velocity of entering flow:  
 (1) cyclone without discontinuity in outlet tube;  
 (2) cyclone with a discontinuity in the tube.

of the collected sample was measured and compared with the radioactivity of the surrounding air and the water in the cloud. The results are given in tabular form and show good correlation. Several suggestions are made for the

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L 5313-66

ACC NR: AT5023964

improvement of the cyclone model. Orig. art. has: 1 figure and 1 table.

SUB CODE: ES/ SUBM DATE: 28Apr65/ ORIG REF: 002/ OTH REF: 000

OC  
Card 3/3

PUDOVKINA, I.B.

Changes in the atmospheric electric field in the region of Mount  
Elbrus. Izv. AN SSSR. Ser. geofiz. no.11:1730-1740 N '63.  
(MIRA 16:12)

PUDOVKINA, I.B.; SEDUNOV, Yu.S.

Initial mechanism of charging the aerosol layer and subinversion  
strato-cumulus clouds. Izv. AN SSSR. Ser. geofiz. no.6:966-977  
Je '63. (MIRA 16:7)  
(Atmospheric electricity)

**PUDOVKINA I. B.**  
USSR/ Geophysics - Atmospheric electricity

FL 320

Card 1/1

Author : Pudovkina, I. B.

Title : Investigations of atmospheric electricity on El'brus

Periodical : Izv. AN SSSR, Ser geofiz. 3, 288-292, May/Jun 1954

Abstract : Presents the results of the works of the El'brus expedition during 1951 on a study of atmospheric electricity. The expedition obtained the normal values of the elements governing atmospheric electricity at the high-mountain observatory "El'brus," and also some data on the character of the excitations of the electric field induced by clouds and of the excitations of the field which are observed during precipitation. Thanks Ye. K. Fedorov for his advice and S. A. Popov for his participation in the obtaining of the experimental data. 6 references-3 Soviet.

Institution : Geophysics Institute, Acad Sci USSR

Submitted : March 14, 1953





PUDOVKINA, I.B.

Some results of studying local electric field anomalies of the  
atmosphere in the region of the Baksan Gorge. Trudy Vysokogor.  
geofiz. inst. AN SSSR 2:134-145 '61. (MIRA 14:12)  
(Baksan Valley--Atmospheric electricity)

3.5130  
3.5800

30012  
1/55:61/002/000/002/002  
5039/0112

AUTHOR: Endovkina, I.B.

TITLE: Some results of a study of the local anomalies of the electric field of the atmosphere in the region of the Baksanskoye Ravine.

SOURCE: Akademiya nauk SSSR. El'brusskaya vysokogornaya ekspeditsiya, 1934-1960. Fizika oblakov i osadkov. Moscow, Izd-vo AN SSSR, 1961 (Its: Trudy, t. II (5)), 134-145

TEXT: On the basis of measurement data covering the period 1953/55, the author examines certain methodical problems of atmospheric and electric measurements, and gives some results of a study of the anomalies of the electric field of the atmosphere in the region of the Baksanskoye Ravine, i.e. in the Terskol Valley located in the foothills of the El'brus Mountain. The equipment used for recording the field potential gradient and the electric conductivity of air was located at three stations situated at various altitudes. At all three places, the field potential gradient was measured by means of a radioactive collector and a mirror torsional electrometer. ✓

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0039/0112

Some results of a study of ...

The conductivity of the air was measured by a cylindrical capacitor through which air was drawn. The quartz torsion electrometers of all sets of equipment were assembled into a single unit, called the recording torsion electrometer, resembling a loop oscillograph. The electrometric readings were recorded on photographic paper. The recording drum had speeds of 21 and 84 mm/h. The author first compares the methods of measuring the electric field by means of a radioactive collector and a dynamic field meter, and concludes that: (1) A radioactive collector gives satisfactory results if the duration of the changes in the field potential gradient are not less than 3 - 5 min. (2) When the wind velocity is 1 - 4 m/sec, the difference between the readings of a dynamic field meter and those of a unit incorporating a radioactive collector is small, while a great difference is observed under ash breeze conditions. The collector readings also depend on the degree of insulation of the unit, which decreases when the degree of absolute humidity is high. When operational conditions are most unfavorable, i.e. during an ash breeze or increased humidity, a 20 - 30% error is tolerable when determining the mean value of the potential gradient from an oscillogram. errors

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D039/0117

Some results of a study of ...

of 42 ... caused by a loss of insulation in the collector may easily be discovered from the nature of the readings. Thus, the radioactive collector method can be used for obtaining data defining the effect of clouds on the electric field of the atmosphere. (3) A radioactive collector should not be used for measuring the electric field during storms and prolonged rainfalls. In short showers, the insulation is preserved, but in this case only the general character of the charge cloud effect and the relative value of the field changes may be found because of the inertia of the collector. When analysing the results of an around-the-clock recording of the electric field, intense disturbances of the field were found on cloudless summer days at the Terskol Station (at higher stations the field remained normal, however). This station is located in the Terskol Valley at 2,200 m above sea level. In day-time, these anomalies took the form of frequent (5 times per hour) and short (3 - 10 minute) deviations of the potential gradient from its normal values to negative values (-5, -20 v/m), and were sometimes observed during several hours. Often these deviations turned into stable negative values of the electric field, lasting 3 - 4 hours. Similar anomalies negative deviations of the field also appeared during clear weather at

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BO39/D112

Some results of a study of

1600 - 1700 hours, and usually 30 minutes - 1 hour prior to cloud formation. When they appeared when local cloudiness was forming in the valley, even when the weather was clear and no cloud formation followed. These "evening" anomalies were more stable, the potential gradient decreasing (1200 - 1500) v/m within 20 - 60 minutes. After 1800 hours no anomalous disturbances were observed. At the moment of such disturbances, the electrical conductivity at the bottom of the valley was somewhat lower. When measuring the electric field on the slopes of the valley, it was found that there were anomalous fields at different heights on the slope up to 100 - 1500 m from the bottom level of the valley. During these anomalies, a clear fog with a fairly clear upper limit (2000 - 2700 m) was often observed in the valley. It was of varying density with a visibility of at least 10 km. These anomalous disturbances were often observed in the hottest period of the year, mainly in July-August, less frequently in June and September. There were no disturbances in the remaining periods of the year. An analysis of the conditions under which the "evening" disturbances arose, showed that in 1963, in 70% of all cases investigated, the local cloudiness formed either after or during the appearance of such disturbances.

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D039/D113

Some results of a study of ...

In 50% of cases no cloud formation was observed. In 1954, the clouds formed in 65% of cases, while in 37% of cases there was no cloudiness at all. The clouds usually formed at 2,500 - 2,700 m above sea level. An analysis of the change in the value of the relative and absolute humidity during the period of anomalous disturbances in the valley showed that both at day time and in the evening the negative anomalous deviations of the electric field appeared in the valley when the absolute humidity was high enough. This analysis covered only clear days or days with little cloudiness. On a clear summer day, the diurnal variation of the relative and absolute humidity in the valley was least at 1200 - 1300 hours and greatest at 2000 hours. On such days, the negative anomalous fields appeared at 1600 - 1700 hours when the humidity attained fairly high values. After 20 - 60 minutes, they disappeared, although humidity was continuing to increase. The absolute humidity values at which disturbances could start, were usually about 7 - 8 mbar. In spite of a high relative humidity, no anomalous disturbances of the electric field appeared in the valley if the humidity content of the air was small. It was found that the appearance of anomalies is mainly dependent on an increased humidity content and on fairly high temperatures in the valley X

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D039/D112

Some results of a study of ...

(over 14°C). To describe the possible role played by the dust content of air in this phenomenon, the character of wind flows in the valley was analyzed on days with negative anomalous disturbances. The results showed that the appearance of anomalies was not dictated by the wind direction in the 2,500 - 3,500 m layer. The anomalies were most frequent in the presence of easterly winds in the 2,200 - 2,500 m layer. It was established by M.S. Sholkovnikov, a scientific worker in the meteorological laboratory, that this wind conveys humid air into the Terskol Valley. Thus, the appearance of anomalies is not associated with western wind flows having a large dust content, but with winds promoting an increase of humidity in the valley. A total of 18 series of measurements of the contents of the condensation nuclei were conducted at the Terskol Station with the aid of the Scholz condensation-nuclei counter. It was established that in the valley the quantity of nuclei increased with an increase in the humidity content. At 7 - 8 mbar of absolute humidity, the content of the nuclei was highest, while at 9 - 10 mbar it scarcely increased at all. Taking into account the conditions under which negative disturbances of the electric field occur, it may be considered that the appearance of these disturbances is associated with an

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D039/D112

Some results of a study of ...

increase of absolute humidity in the valley. It was also found that apart from the absolute humidity increase, there are two other factors dictating the appearance of field anomalies, i.e. a sufficiently high air temperature and an insufficient air saturation in the valley. Comparing the results, the author explains the appearance of negative anomalous field disturbances in the Terskol Valley during clear weather by the fact that, when a large quantity of humidity in the form of minute incipient drops is concentrated in the air mass, which is assumed to be stable, the ions are charged by a negative charge due to the great mobility or excess of negative ions contained in the air. Phenomena similar to those described above, were mentioned by V.I. Gerasimenko (Ref. 4: Trudy VAI, t. 97, 1937.) who investigated the character of the field potential gradient at the Chelyuskin Cape, and by Kuzhn (Ref. 5: Izv. f. Meteorol., Bd. 10, N. 5, 117, 1956). The author thanks Academician Ye. K. Fedorov and senior scientific worker of the IIC AN S.S. N.Y. Krasnogorskaya for their supervision of the work, Professors P.N. Tverskiy and A.kh. Khrgian for reading the manuscript and making valuable comments, as well as scientific workers R.M. Kozel'skaya, V.I. Solodovnikov

30012

8/624/61/007/00/000/000

EO327/0112

den. results of a study of ...

and G.M. Solov, who helped to obtain and process the data. There are 11 figures, 2 tables and 5 references: 4 Soviet-bloc and 1 non-Soviet-bloc.

X

18

Accumulation of organic substances in the production of alumina by the Bayer process. F. F. Voll and O. J. Puckvika. *Lachis Metall.* 4, No. 8, 24-34 (1935). In the treatment of Ural bauxites, the org. substances in soln. increase up to the 6th or 6th cycle. After this they remain const. The amt. is insufficient to be harmful.

H. W. Rathmann

1ST AND 2ND ORDERS		PROCESSES AND PROPERTIES INDEX		1ST AND 2ND ORDERS	
<p><i>Ch</i></p> <p>The process of decomposition of aluminate solutions and methods for improving its efficiency. F. F. Vol't and O. I. Pudlovskiy. <i>Trudy Vsesoyuz. Nauch.-Issledovatel'sk. Inst. Issledovaniya i Proektirovaniya Aluminatsionnoi Elektroimoi Prom.</i> 1940, No. 20, 21-32; <i>Khim. Referat. Zhur.</i> 1940, No. 8, 89. — Theoretical analyses and exper. verification of the decompn. of aluminate solns. according to the Bayer method are given. Analyses of the diagrams indicate that the effectiveness of the decompn. method can be increased by lowering the moduli (<math>\text{Na}_2\text{O}/\text{Al}_2\text{O}_3</math> ratio) of the initial and the final solns., at an optimum dln. for the given modulus. The expts. confirmed these conclusions. Initial and final moduli of 1.1 and 3.41, resp., gave the best yields. W. R. Henni</p> <p style="text-align: right;">18</p>					
<p>ASAC-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>					
REGION 1		REGION 2		REGION 3	
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100	

137 AND 138 SERIES										140 AND 17M SERIES									
PROCESSES AND PROPERTIES INDEX																			
C A										2									
<p>Binary system sodium chromate-calcium chromate. Ya. E. Vn'yanskii and O. I. Pado'sina. <i>Zhur. Obshch. Khim. (J. Gen. Chem.)</i> 18, 1063-6 (1948).—The system was studied by thermal analysis and microscopic exams. The m.p. of salts rises from that of pure <math>\text{Na}_2\text{CrO}_4</math> (780°) to a max. of 813° at about 15 mol.% <math>\text{CaCrO}_4</math>, and then drops to the eutectic at 740°, with the formation of solid soln. over the whole range. The eutectic occurs at 48.4 mol.% <math>\text{CaCrO}_4</math> and is in equl. with a solid soln. contg. 44 mol.% <math>\text{CaCrO}_4</math> and with pure <math>\text{CaCrO}_4</math>. The m.p. rises sharply from the eutectic towards higher concns. of <math>\text{CaCrO}_4</math>: at 80 mol.% <math>\text{CaCrO}_4</math> the m.p. is about 975°. No measurements were made beyond this point because of decompos. of the <math>\text{CaCrO}_4</math>. Arild J. Miller</p>																			
ASB-51A METALLURGICAL LITERATURE CLASSIFICATION																			
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CA

2

Reciprocal system  $\text{CaCrO}_4 + \text{Na}_2\text{CO}_3 = \text{Na}_2\text{CrO}_4 + \text{CaCO}_3$ . Ye. E. VU'YANIKH and O. I. PAKOVICH. *Zhur. Priklad. Khim.* (J. Applied Chem.) 31, 1343-8 (1948); cf. C.A. 43, 4477b; 45, 6680f. — The system was investigated by the method of thermal analysis, and the solid phases were identified optically. All expts. were made in an atm. of  $\text{CO}_2$ . The systems  $\text{Na}_2\text{CO}_3$ - $\text{Na}_2\text{CrO}_4$  and  $\text{Na}_2\text{CrO}_4$ - $\text{CaCrO}_4$  were investigated previously.  $\text{CaCO}_3$  and  $\text{Na}_2\text{CO}_3$  form solid solns. with max. m.p. 878° at 7%  $\text{CaCO}_3$  (all compns. in equiv. %). There is a eutectic m. 788°, contg. 38%  $\text{CaCO}_3$ , where the solid phases are a solid soln. of  $\text{CaCO}_3$  in  $\text{Na}_2\text{CO}_3$  contg. 28%  $\text{CaCO}_3$  (the only limit) and the binary compd.  $\text{Na}_2\text{CO}_3$ - $\text{CaCO}_3$ . The latter compd. m. 813°. Mixts. richer in  $\text{CaCO}_3$  were not investigated, owing to the darkening encountered at high temps. The  $\text{CaCrO}_4$ - $\text{CaCO}_3$  system was not investigated for the same reason. The reciprocal system has 5 crystn. regions where the solid phases are, resp.:  $\text{CaCrO}_4$ ,  $\text{CaCO}_3$ ,  $\text{Na}_2\text{CO}_3$ - $\text{CaCO}_3$  solid solns. of  $\text{CaCO}_3$  in  $\text{Na}_2\text{CO}_3$ , and solid solns. of  $\text{CaCrO}_4$  in  $\text{Na}_2\text{CrO}_4$ . There are 3 quaternary eutectics with the following values for temp., % Ca, and %  $\text{CO}_3$ : 688°, 49, 22; 646°, 37, 52; and 646°, 37, 62. Arild J. Miller

PROCESS AND PROPERTY INDEX	
<p>Rule of sodium ferrate in the formation of sodium chromate from soda and natural chromite. Va. E. Vityayevskii and O. I. Fedorovskii. <i>Zhur. Priklad. Khim.</i> (J. Applied Chem.) 22, 683-8 (1949); cf. C. A. 43, 4477b.</p> <p>—In the fusion of natural <math>\text{Cr}_2\text{O}_3 \cdot \text{Fe}_2\text{O}_3</math> with <math>\text{Na}_2\text{CO}_3</math> in air or <math>\text{O}_2</math> at 1000–1200°, large hexagonal plates (up to 1 mm.), of <math>\text{Na}_2\text{FeO}_4</math> are readily identified by their red to orange-yellow color and birefringence, <math>n_y = 2.80</math>, <math>n_x &gt; 2.43</math>, and are easily distinguished from the much finer, and more highly birefringent <math>\text{Fe}_2\text{O}_3</math> grains. Formation of ferrate is observed under the same conditions in fusion of readily-made ferrite, according to <math>\text{Na}_2\text{Fe}_2\text{O}_4 + \text{Na}_2\text{CO}_3 + 1.5 \text{O}_2 = 2 \text{Na}_2\text{FeO}_4 + \text{CO}_2</math>, confirmed by detns. of active O. The stability of <math>\text{Na}_2\text{FeO}_4</math> above 1180° is due to its soln. in fused <math>\text{Na}_2\text{CO}_3</math>; in the free state, <math>\text{Na}_2\text{FeO}_4</math> decomposes at that temp. Some amt. of <math>\text{Na}_2\text{FeO}_4</math> is formed also when <math>\text{Na}_2\text{Fe}_2\text{O}_4</math> is heated, in air or <math>\text{O}_2</math>, with <math>\text{Na}_2\text{Cr}_2\text{O}_7</math> in 1280°, but none is formed when <math>\text{Fe}_2\text{O}_3</math> is heated with <math>\text{Na}_2\text{Cr}_2\text{O}_7</math>. The <math>\text{Na}_2\text{Cr}_2\text{O}_7</math> plays only the role of solvent which prevents decompn. of the <math>\text{Na}_2\text{FeO}_4</math> formed. If <math>\text{Na}_2\text{CO}_3</math> is added to <math>\text{Na}_2\text{Fe}_2\text{O}_4 + \text{Na}_2\text{Cr}_2\text{O}_7</math>, the yield of <math>\text{Na}_2\text{FeO}_4</math> increases. Replacement of <math>\text{Na}_2\text{CO}_3</math> by <math>\text{CaCO}_3</math> is unfavorable. A batch of 0.76 g. <math>\text{Cr}_2\text{O}_3</math>, 2.22 g. <math>\text{Na}_2\text{Fe}_2\text{O}_4</math>, 0.28 g. MgO, heated 30 min. at 1180° in <math>\text{O}_2</math> (7.5–10%) diss. by <math>\text{Na}_2\text{O}</math> yielded 91–93% conversion to <math>\text{Na}_2\text{FeO}_4</math>. Crystals of <math>\text{Na}_2\text{FeO}_4</math> were identified also in samples from industrial fusion of mixts. of chromite, <math>\text{Na}_2\text{CO}_3</math>, and dolomite.</p> <p>N. Thon</p>	<p>6</p>
<p>ASB-55.5 METALLURGICAL LITERATURE CLASSIFICATION</p>	

CA

9

• The gas phase in the roasting of chromite batches. O. I. Pudovkina and N. A. Gushchina. *Zhuk. Priklad. Khim.* 24, 1130-36 (1951). The process of oxidation of chromite depends on the O<sub>2</sub> concn. in the gas phase, on speed of gas passage, and on the total amt. of O<sub>2</sub> passed through the batch. High degree of oxidation of chromite requires O<sub>2</sub> content in the furnace gas to be no less than  $2 \times 10^4$ .  
S. Strizell



PUDOVKINA, O.I.; KIREYEVA, M.V.

Mineralogical composition of the roasted mass in bichromate manufacture.  
Zhur.prikl.khim.29 no.6:828-833 Je '56. (MIRA 9:9)

1.Ural'skiy nauchno-issledovatel'skiy khimicheskiy institut.  
(Sodium chromates) (Chromium ores)

PUDOVKINA, O. I.

✓  
Aum Mineralogical composition of the molten mass in the  
production of sodium chromate. O. I. Pudovkina and M.  
V. Kireeva. *J. Appl. Chem. U.S.S.R.* 29, 898-903 (1956)  
(English translation).—See C.A. 50: 17252a R. M. D.

*Pudovkina, O. I.*  
USSR /Chemical Technology. Chemical Products  
and Their Application

I-6

Mineral salts. Oxides. Acids. Bases.

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 31250

Author : Pudovkina O. I., Kireyeva M. V.

Title : Concerning the Mineralogical Composition of Cal-  
cined Material in the Production of Bichromate

Orig Pub: Zh. prikl. khimii, 1956, 29, No 6, 828-833

Abstract: On investigation of the mineralogical composition  
of chromate sintering product obtained on sinter-  
ing of chromite in admixture with soda and dolo-  
mite, at 1150°, until Cr is completely oxidized,  
it was found that composition of the resulting  
minerals depends on the amount of soda in the  
batch, the amount of CaO introduced into the batch

Card 1/2

PUDOVKINA, O. N.

The chemistry of the production of sodium chromate. I  
Ya. E. Vil'nyanskii and O. N. Pudovkina. *J. Applied Chem. (U.S.S.R.)* 20, 794-9 (1947) (in Russian).—Melt-  
ing temps. and mutual solubilities were detd. for the prin-  
cipal systems involved in the production of  $\text{Na}_2\text{Cr}_2\text{O}_7$  by  
oxidative fusion of  $\text{FeO} \cdot \text{Cr}_2\text{O}_3$  (chromite),  $\text{Na}_2\text{CO}_3$ , and  
 $\text{CaO}$ . The system  $\text{Na}_2\text{Cr}_2\text{O}_7$  (m.  $792^\circ$ )– $\text{Na}_2\text{CO}_3$  (m.  $853^\circ$ )  
has a eutectic at  $666^\circ$ ,  $\text{Na}_2\text{Cr}_2\text{O}_7$  62.6% by wt.; no solid  
solns. are formed. The soly. of  $\text{CaCr}_2\text{O}_7$  in fused  $\text{Na}_2\text{Cr}_2\text{O}_7$   
attains 50% at  $760^\circ$  and 80% at  $1000^\circ$ . The system  
 $\text{Na}_2\text{Cr}_2\text{O}_7$ – $\text{Na}_2\text{SiO}_3$  has a eutectic at  $770^\circ$ ,  $\text{Na}_2\text{SiO}_3$  10%;  
in the liquid state, mutual soly. is complete. In the pro-  
duction process, the liquid mass is essentially a soln. of  
 $\text{Na}_2\text{Cr}_2\text{O}_7$  and  $\text{Na}_2\text{CO}_3$ , with the latter component increasing  
with rising temp., then decreasing gradually far below  
the m.p. of  $\text{Na}_2\text{CO}_3$  as more  $\text{Na}_2\text{Cr}_2\text{O}_7$  is formed and  $\text{Na}_2\text{CO}_3$   
reacts with the other ingredients of the batch to form  
 $\text{Na}$  ferite, aluminates, and silicates, which in turn react  
with the  $\text{FeO} \cdot \text{Cr}_2\text{O}_3$ ,  $\text{CaO}$ , and  $\text{O}_2$  to give more  $\text{Na}_2\text{Cr}_2\text{O}_7$   
and infusible  $\text{Ca}$  compds. At highest temps., close to  
 $1200^\circ$ , the liquid mass is essentially nearly pure  $\text{Na}_2\text{Cr}_2\text{O}_7$ .  
N. Thon

PUKOVITS, A.M., kand.sel'skokhoz.nauk

Nature of the development of cotton varieties and hybrids under  
various light conditions. Agrobiologiya no. 3:369-373 M. Ia '64.  
(MIRA 17:7)

1. Institut selektsii i semenovodstva khlopnatnika, Tashkent.

KHOMYAKOV, A.P.; STEPANOV, V.I.; MOLEVA, V.A.; PUDOVKINA, Z.V.

New mineral "tikhonenkovite"  $\text{SrAlF}_2(\text{OH}) \cdot \text{H}_2\text{O}$ . Dokl. AN  
SSSR 156 no. 2:345-347 My '64. (MIRA 17:7)

1. Predstavleno akademikom N.V. Belovym.

PUDOVKINA, Z.V.; PYATENKO, Yu.A.

Crystal structure of ~~non-metamict~~ orthite. Dokl. AN SSSR  
153 no.3:695-698 N '63. (MIRA 17:1)

1. Institut mineralogii, geokhimii i kristalloghimii redkikh  
elementov AN SSSR. Predstavleno akademikom N.V. Belovym.

PUDOVKINA, I.A.; PUDOVKINA, Z.V.; SOLNTSEVA, L.S.

Studying wolframites by curves of the infrared absorption spectrum.  
Min. sbor. no.15:120-128 '61. (MIRA 15:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut mineral'nogo  
syr'ya, Moskva. (Wolframite--Spectra)



PYATENKO, Yu.A.; PUDOVKINA, Z.V.

Crystal structure of narsarsukite. Kristallografiia 4 no.4:563-573  
Jl-Ag '60. (MIRA 13:9)

1. Institut mineralogi, geokhimi i kristallokhimii redkikh elementov.  
(Narsarsukite)

PYATENKO, Yu.A.; PUDOVKINA, Z.V.

Metrics of  $\text{CaZrTi}_2\text{O}_7$  crystal lattices. Kristallografiia 9  
no.1:98-100 Ja-F 64. (MIRA 17:3)

1. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov  
AN SSSR.

ZHABIN, A.G.; PUDOVKINA, Z.V.; BYKOVA, A.V.

Calzirtite from the Gulinskaya intrusion of ultrabasic  
alkaline rocks in polar Siberia. Dokl. AN SSSR 146 no.6:1399-  
1400 0 '62. (MIRA 15:10)

1. Institut mineralogii, geokhimii i kristalloghimii redkikh  
elementov AN SSSR. Predstavleno akademikom N.V. Belovym.  
(Siberia, Eastern--Zirconates)

PYATENKO, Yu.A.; PUDOVKINA, Z.V.

Crystal structure of narsarsukite. Kristallografiia 4 no.6:929  
N-D '59. (MIRA 14:5)

1. Institut mineralogii, geokhimii i krisallokhimii redkikh  
elementov.

(Narsarsukite)

MAIKOV, Vladimir Mikhaylovich; MINEYEV, Viktor Andreyevich; PUDOZHGORSKIY,  
V.K., red.; SOKOLOVA, S.I., tekhn.red.

[Across the North; guidebook] Po severu; putevoditel'. Vologda,  
Vologodskoe knizhnoe izd-vo, 1960. 334 p.

(MIRA 13:12)

(Russia, Northern--Guidebooks)

PUDYAKOV, Z.Z., dotsent, kand.tekhn.nauk

Determining additional traction force at contact points in case of a variable value of the friction coefficient. Izv.vys. ucheb.zav.; mashinostr. no.6:35-43 '59. (MIRA 13:5)

1. Dnepropetrovskiy institut inzhenerov zheleznodorozhnogo transporta.  
(Locomotives--Dynamics)

1. IVASHINA, A., KUMAR, N., ANDYUN, A, L.

2. USSR (600)

4. Cotton

7. Methods for increasing the yield potential of seeds and the technological properties of cotton fibers, izvestiya No. 6, 1951.

9. Monthly List of Russian Accessions, Library of Congress, June 1953. Unclassified.

USSR / General Biology - Genetics.

B

Abs Jour: Ref Zhur-Biol., No 9, 1958, 38056.

Author : Pudovkina, Z.

Inst : Not given.

Title : Formation of Cotton-Plant Hybrids Under Different Lighting Conditions.

Crig Pub: Khlopkovodstvo, 1957, No 6, 33-37.

Abstract: Hybrid cotton-plant forms (S-460 x S-3404 and S-3316 x S-460) were cultivated under shortened (10 hours) and natural (14-15 hours) daylight. Shortening of the day caused more rapid plant development. Subsequent generations obtained F<sub>1</sub> seeds cultivated on a shortened day conserved their considerably faster ripening ability compared to the same generation of F<sub>1</sub> cultivated on a natural, longer day. Corresponding dif-

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USSR / General Biology - Genetics.

B

Abs Jour: Ref Zhur-Biol., No 9, 1958, 38056.

Abstract: ferences in the flowering time were 2-5 days, and in maturing, 5-6 days. Simultaneously with speedier ripening, the cultivation of  $F_1$  on a short day produced in subsequent generations a decrease of the boll's average weight by 0.5-0.7 g and increased the yield of fiber by 1.0-1.5%.

Card 2/2

21

PUDOVKINA, Z.M., kand.sel'skokhoz.nauk

Effect of light conditions on the development of economically  
valuable properties in cotton. Agrobiologiya no.6:809-814 N-D '60.  
(MIRA 13:12)

1. Institut selektsii i semenovodstva khlopchatnika Uzbekskoy  
sel'skokhozyaystvennoy akademii nauk g. Tashketn.  
(Cotton growing) (Plants, Effect of light on)

USSR / Cultivated Plants. Plants for Technical Use.  
Oil Plants. Sugar Plants.

Abs Jour : Ref Zhur - Biologiya, No 6, 1959, No. 24969

Author : Pudovkina, Z. M.

Inst : Not given

Title : Effect of the Light Factor on the Formation  
of Early Maturity in Hybrid Forms of the  
Cotton Plant

Orig Pub : V sb.: Materialy Ob"yedin. nauchn. sessii po  
khlopkovodstvu. T. 2. Tashkent, Gosizdat  
UzSSR, 1958, 41-46

Abstract : Formation of early maturity due to the  
influence of a shortened 10-hour day on  
the hybrids of F<sub>1</sub>, by crossing the varieties  
*Gossypium hirsutum* L., is preserved, although  
not completely, in F<sub>2</sub>, F<sub>3</sub> and F<sub>4</sub> at the

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PUDOVKINA, Z. M.

The Committee on Stalin Prizes (of the Council of Ministers USSR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscow, No. 22-40, 20 Feb - 3 Apr. 1954)

<u>Name</u>	<u>Title of Work</u>	<u>Nominated by</u>
<u>Pudovkina, Z. M.</u>	"Cotton Growing" Textbook	Ministry of Agriculture Uzbek SSR

SO: W-30604, 7 July 1954

PYATENKO, Yu.A.; PUDOVKINA, Z.V.

Crystalline structure of calcium zirconium titanate - a new derivative of the structural type  $\text{CaF}_2 - \text{CeO}_2$ . Kristallografiia 6  
no.2:196-199 Mr-Ap '61. (MIRA 14:9)

1. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov.  
(X-ray crystallography) (Calcium zirconium titanate)

24.7100

77125  
SOV/70-4-6-26/31

AUTHORS: Pyatenko, Yu. A., Pudovkina, Z. V.

TITLE: Concerning the Crystal Structure of Narsarsukite.  
Brief Communications

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 6, p 929 (USSR)

ABSTRACT: The structural study of  $\text{Na}_2(\text{Ti,Fe})(\text{O,OH}) [\text{Si}_4\text{O}_{10}]$  crystals by X-ray diffraction methods confirmed their tetragonal symmetry,  $a = 10.72 \text{ \AA}$ ,  $c = 7.99 \text{ \AA}$ , and  $4$  molecular weights per unit cell. The space group proved to be  $I 4/m$ . Determination of the atomic coordinates and precision of the 14 parameters (by interatomic vector synthesis and electron density analysis) is still in process. The structure as a whole is formed of two types of chains. (Ti,Fe) atoms, each developed by 6 O atoms which form an octahedron, are linked into infinite chains along the fourfold rotor. The  $(\text{Ti,Fe})\text{O}_6$  octahedra are linked laterally by rings of 4 tetrahedrally coordinated Si atoms. One

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Concerning the Crystal Structure of  
Narsarsukite. Brief Communications

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vertex of each two opposite tetrahedra in the ring is up and of the two others down, and the O atoms at these vertices, being shared by the rings above and below, link the rings into infinite quadruple chains along the same fourfold rotor. The spaces between the two types of chains are occupied by Na atoms situated at two different positions. In both positions Na atoms are in body centers of trigonal prisms formed by the adjacent O atoms. There is 1 figure; and 2 references, 1 German, 1 U.S. The U.S. reference is: B. E. Warren, C. R. Amberg, Am. Miner., 19, 546, 1934.

ASSOCIATION: Institute of Mineralogy, Geochemistry, and Crystal Chemistry of Rare Elements (Institut mineralogii, geokhimii i kristallokhimii redkikh elementov)

SUBMITTED: September 25, 1959

Card 2/2

BOBROV, Nikolay Sergeyevich [deceased]; PUDOZHGORSKIY, V.K., red.;  
SOKOLOVA, S.I., tekhn.red.

[In the heart of northern Russia] V serdtse Rusi Severnoi.  
Vologda, Vologodskoe knizhnoe izd-vo, 1959. 230 p.

(MIRA 13:2)  
(Kirillov District--Description and travel)



SAVINOV, Vyacheslav Alekseyevich; LOBANOV, Antoniy Nikolayevich;  
PUDOZHGORSKIY, V.K., red.

[Wild animals of Vologda Province] Zveri Vologodskoi oblasti.  
Vologodskoe knizhnoe izd-vo, 1958. 206 p. (MIRA 12:2)  
(Vologda Province--Animals)

PUDR, inz.

Seventy-fifth birthday of Rudolf Hanak. Geod kart obzor 10  
no. 1:24 '64.

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"Collection of papers on the history of natural sciences and technology." Reviewed by Pndr. Geod kart obzor 10 no. 3: Supplement: Literarni hlidka 10 no. 3: 3 of cover '64.

HONL, Ivan; PUDR, Jaroslav

The way Copernicus' theory was accepted in Czechoslovakia. ~~Pr~~egl  
geod 34 no.10:430-431 0 '62.

PUDR, J.

"A contribution to the history of the surveying of the capital city of Prague on the scale of 1:720; 1902-1905."

p. 174 (Kartograficky Prehled) Vol. 10, no. 4, Dec. 1956  
Prague, Czechoslovakia

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4,  
April 1958

FUDREV, D.

21225 Pudrev, D. Novoye Zdaniye Moskovskogo univertsiteta (K prisuzhdeniyu Stalinskoy premii autoram proyekta S. Chernyshevu, P. Abrosimovu i A. Khryakovu) Kul't-prosvet Rabota, 1949, No. 6, s. 16-18.

SO: LETOPIS JHURNAL STATEY - Vol. 28, Moskva, 1949

PUDULIS, A. (G. Rezekne).

Unsolved "problems." Sov. foto 17 no.3:75-76 Nr '57. (MLRA 10:6)  
(Latvia--Photography--Apparatus and supplies)

PUDVIK

"Allyl Rearrangements - X: Action of Alcoholic Caustic Solutions of Alkalies on  
Isomeric Butoxychlorpentenes."  
Pudvik, and Nikitina. (p. 67)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1949, Volume 19, No. 1



L 36736-65 EAT(d)/EAT(1)/EEC(k)-2/EEB-2/EAT(1)/EWA(h) Fc-1/Pq-1/Pg-1/Peb/Pk-1  
 ACCESSION NR: AT5003913 IJP(c) BB/GG/GS S/0000/64/000/000/0172/0178

AUTHOR: Pudzenkov, N.A.

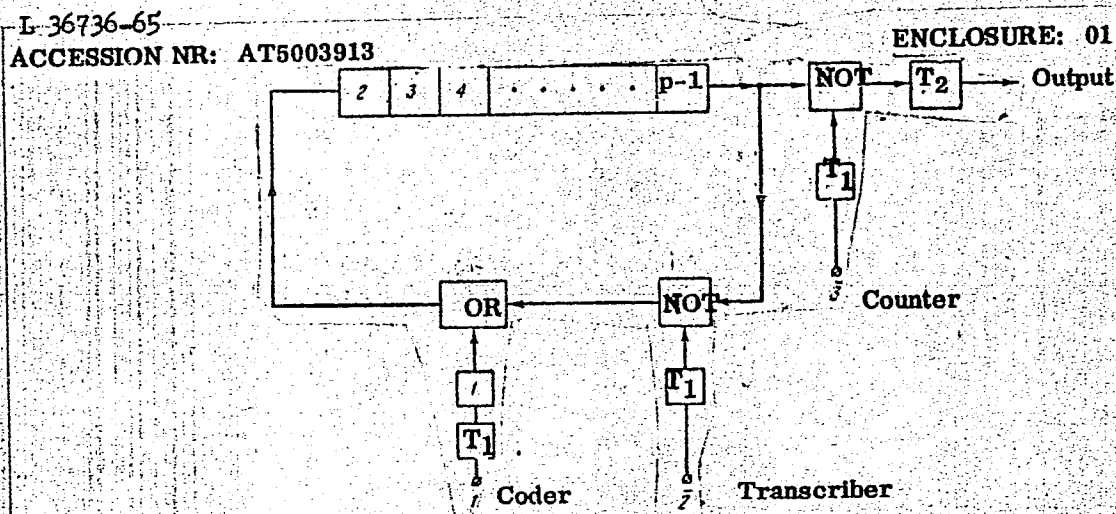
TITLE: Parametron memory device for a digital differential analyzer

SOURCE: Vsesoyuznaya konferentsiya-seminar po teorii i metodam matematicheskogo modelirovaniya. 3d, 1962. Vychislitel'naya tekhnika v upravlenii (Computer technology in control engineering); sbornik trudov konferentsii. Moscow, Izd-vo Nauka, 1964, 172-178

TOPIC TAGS: differentiator, differential analyzer, parametron, memory, high speed memory, register, logic design, computer component

ABSTRACT: The paper is devoted to a functional description of a memory device for use with a digital differential analyzer. The memory is constructed with the use of parametrons and operates serially. The schematic for the memory registers is shown in Fig. 1 of the Enclosure. The circuit for an individual memory cell is shown in Fig. 2. The schematics for the NOT and OR gates are shown in Figs. 3 and 4. Operating characteristics and temperature ranges of operation for the various components are given. Orig. art. has: 6 figures. [02]

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ENCLOSURE: 02

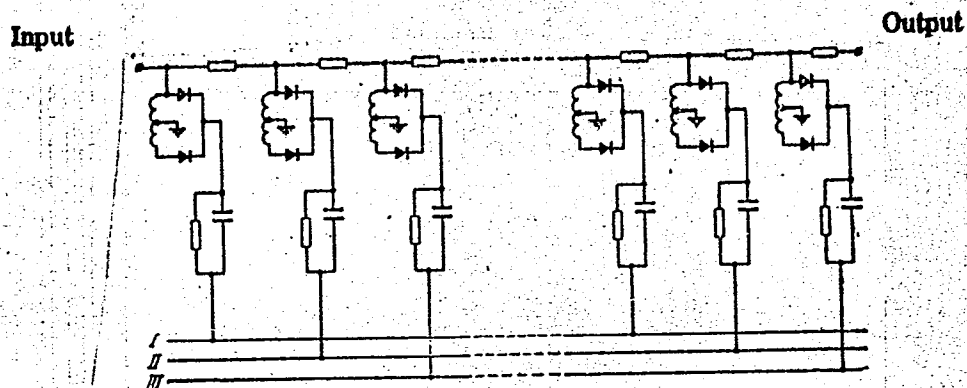


Fig. 2. Circuit diagram of individual memory cells

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ENCLOSURE: 03

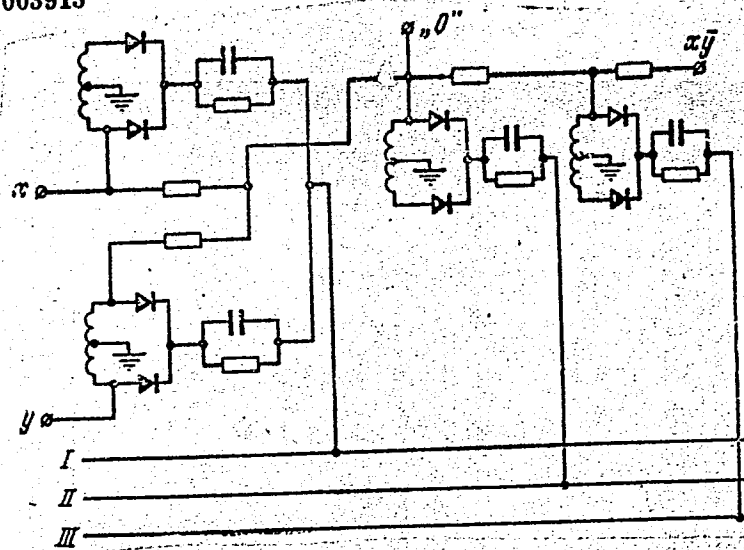


Fig. 3. Circuit diagram of the NOT gate

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